

**Notice of Allowability**

Application No.

10/631,174

Examiner

Connie C. Yoha

Applicant(s)

LI ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/26/05.
2. ☒ The allowed claim(s) is/are 1-5, 10, 14 and 15 and 14
3. ☒ The drawings filed on 31 July 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

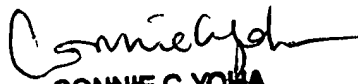
\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 6/11/05.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

  
CONNIE C. YOHA  
PRIMARY EXAMINER

## DETAILED ACTION

### *Response to Arguments*

1. Examiner took notice of the remarks and amendments made by applicant filed on 5/26/05.

### *Response to Amendment*

2. This office action is in response to Amendment filed on 5/26/05.  
Claim 10 is amended.  
Claims 6-9, and 11 are canceled.

## EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Antony P. Ng on 6/13/05.

4. The application has been amended as follows:

Claim 10, after line 7 and before the text "and", insert --- **a voltage limiting circuit, coupled to said chalcogenide storage element, for ensuring that voltages across said chalcogenide storage element do not exceed a predetermined value during a read operation;**---

Claim 10, starting on line 11, delete "wherein said current-to-voltage circuit includes a p-channel transistor and an n-channel transistor"

Claim 10, after the text "control circuit" on line 10, insert: **---wherein said chalcogenide storage element is capable of changing from an amorphous phase to a crystalline phase, or vice versa, via an application of an appropriate amount of current; and wherein said flow-through current is 1 mA and 0.5 mA when said chalcogenide storage element is in said amorphous phase and said crystalline phase, respectively.**

Claim 11, re-enter the original claim 11.

Claim 12, cancel.

Claim 13, cancel.

5. Claims 1-5, 10-11 and 14 are now pending.

***Allowable Subject Matter***

6. Claims 1-5, 10-11 and 14 are allowed.

7. Claims 1-5, 10-11 and 14 are considered allowable since prior art made of record and considered pertinent to the applicant's disclosure does not teach or suggest the claimed limitations having in combination with other features, a chalcogenide storage element, a voltage limiting circuit, coupled to chalcogenide storage element, for ensuring that voltage across the chalcogenide storage element do not exceed a predetermined value during a read operation and a current-to-voltage converter circuit, coupled to the voltage limiting circuit, for converting or sensing a current pulse read from said chalcogenide storage element to a voltage pulse during said read operation, wherein the flow-through

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current is 1 mA and 0.5 mA when the chalcogenide storage element is in the amorphous phase and said crystalline phase, respectively.

### ***Conclusion***


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to whose telephone number is (571) 272-1799. The examiner can normally be reached on Mon. - Fri. from 8:00 A.M. to 5:30 PM. The examiner's supervisor, David Nelms, can be reached at (571) 272-1787. The fax phone number for this Group is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-0956.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov> should you have questions on access to the Private Pair system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**C.Yoha**

June 2005



**CONNIE C. YOHA**  
**PRIMARY EXAMINER**